Concentric Core Loose Tube Micro Cable - The Viper Series

GNHLDV Dielectric 12-192 Fibers G.652D

Features

- Up to 192 fibers
- Super slim design
- Excellent installation performance
- Unique design with robust inner tubes that does not kink
- Temperature range from -45 to +70°C
- Excellent bend performance, ≥30 mm
- Easy to prepare and identify fibers

Application

The Hexatronic Viper series of micro cables are characterized by state of the art installation performance when installed by blowing into microducts. Particularly, installations in access networks with difficult routes, which are facilitated by the enhanced performance of the Viper cables.

All parameters such as cable diameter, sheath friction, cable stiffness etc are optimized for best installation performance without compromizing mechanical or environmental properties.

The micro cables are based on a slim loose tube design with up to twelve tubes per cable. The design facilitates fiber preparation and mid-span access. The cables are suitable for long-distance, air blown installation in microducts, with an inner diameter of as little as 8 to 12 mm.

The cables have excellent bend performance and an extremely wide operational temperature range.

Design

The Micro Cables are designed with inner protective tubes made of a unique Poyamide compound. The Polyamide gives a special strength to the product, while increasing the bending properties as well as other benefits such as extreme temperature resistance.

As a result, The Viper Micro Cables are more durable during the installation process as they are able to withstand rough handling. The unique cable design with an extended operational temperature range of -45 to +70°C can be used in many environments, on all continents where heat and cold are often a major concern.

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Typical Data

Temperature range

Operation..... -45 to +70°C
Storage ..... -45 to +70°C
Handling..... -15 to +50°C
Cable temperature,
blown installation ..... -15 to +40°C

Bending radius

Cable bend radius, permanent
¼ turn/ single turn/ multiple turns
12-96 fiber..... ≥ 30/ 30/ 70 mm
144 fiber..... ≥ 30/ 30/ 70 mm
192 fiber..... ≥ 30/ 30/ 80 mm

Tensile force

During installation/ operation
12-96 fiber..... ≤ 1200/ 50 N
144 fiber..... ≤ 1600/ 75 N
192 fiber..... ≤ 2500/ 170 N

Crush resistance ($\Delta\alpha \leq 0.05$ dB after test, no damage)

12-96 fiber..... ≤ 2000N/100 mm
144 fiber..... ≤ 2200 N/100 mm
192 fiber..... ≤ 5000 N/100 mm

Cable weight

12-96 fiber..... 27.5 kg/km
144 fiber..... 35 kg/km
192 fiber..... 47 kg/km

Typical installation performance*

Ducts, inner diameter 8-10 mm

12-144 fiber	2000 m
192 fiber	1000 m

Ducts, inner diameter 10-12 mm

12-192 fiber	2000 m

* Installation performance verified on Hexatronic test track, according to IEC 60794. Installation performance is affected by the installed path, environmental conditions, installation equipment etc and actual performance may therefore deviate from the above specified values.

Delivery Information

Supplied lengths ..... 2, 4, 8 km

The cable is length water blocking according to IEC 60794-1-2-F5B.
Mechanical and environmental test in accordance with IEC 60794-5-10
Fiber parameters and tests according to the IEC series 60793-2 and 60793-1
The cable shall not be stored in direct sun light. The sun may heat up the cable over the permitted temperature limit

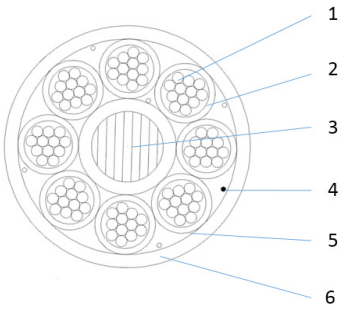
Color Coding

The cables are available in several versions with different color coding systems: S12, TIA598 (Bellcore) or STD-E (Standartd type E). Other color code systems are avilable on request.

Black fillers can replace white tubes.

Design

1. Primary coated fiber.....Silica, acrylate
2. Loose tube .....PA
3. Central strength member .....Glass fiber reinforced plastic, PE
4. Slit up yarn.....Aramide yarn
5. Wrapping .....Water blocking yarns
6. Sheath .....Polyethylene, halogen-free



Transmission Characteristics, G.652D

Attenuation	@ 1310nm	@ 1550nm	@ 1625nm
Mean value in cable	0.36dB/km	0.22dB/km	0.25dB/km
Max value individual	0.38dB/km	0.25dB/km	0.30dB/km

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Ordering Information

		Tubes/Fibers		Diameter	Weight	For Microducts ID
Product No.	**Product Name**	**No.**	**Color Code**	**ø (mm)**	**kg/km**	**ø (mm)**
TOL4019032/12AH	Micro Cable 12f G652D S12	1x12 (12f)	S12	5.9	27.5	8 - 10 - 12
TOL4019032/24AH	Micro Cable 24f G652D S12	2x12 (24f)	S12	5.9	27.5	8 - 10 - 12
TOL4019032/48AH	Micro Cable 48f G652D S12	4x12 (48f)	S12	5.9	27.5	8 - 10 - 12
TOL4019032/72AH	Micro Cable 72f G652D S12	6x12 (72f)	S12	5.9	27.5	8 - 10 - 12
TOL4019032/96AH	Micro Cable 96f G652D S12	8x12 (96f)	S12	5.9	27.5	8 - 10 - 12
TOL4019032/144AH	Micro Cable 144f G652D S12	6x24 (144f)	S12	6.7	35	8 - 10 - 12
TOL4019028/192AH	Micro Cable 192f G652D S12	8x24 (192f)	S12	7.9	47	10 - 12
TOL4019032/12C	Micro Cable 12f G652D TIA598	1x12 (12f)	TIA598	5.9	27.5	8 - 10 - 12
TOL4019032/24C	Micro Cable 24f G652D TIA598	2x12 (24f)	TIA598	5.9	27.5	8 - 10 - 12
TOL4019032/48C	Micro Cable 48f G652D TIA598	4x12 (48f)	TIA598	5.9	27.5	8 - 10 - 12
TOL4019032/72C	Micro Cable 72f G652D TIA598	6x12 (72f)	TIA598	5.9	27.5	8 - 10 - 12
TOL4019032/96C	Micro Cable 96f G652D TIA598	8x12 (96f)	TIA598	5.9	27.5	8 - 10 - 12
TOL4019032/144C	Micro Cable 144f G652D TIA598	6x24 (144f)	TIA598	6.7	35	8 - 10 - 12
TOL4019022/192C	Micro Cable 192f G652D TIA598	8x24 (192f)	TIA598	7.9	47	10 - 12
TOL4019032/12A	Micro Cable 12f G652D STD-E	1x12 (12f)	STD-E	5.9	27.5	8 - 10 - 12
TOL4019032/24A	Micro Cable 24f G652D STD-E	2x12 (24f)	STD-E	5.9	27.5	8 - 10 - 12
TOL4019032/48A	Micro Cable 48f G652D STD-E	4x12 (48f)	STD-E	5.9	27.5	8 - 10 - 12
TOL4019032/72A	Micro Cable 72f G652D STD-E	6x12 (72f)	STD-E	5.9	27.5	8 - 10 - 12
TOL4019032/96A	Micro Cable 96f G652D STD-E	8x12 (96f)	STD-E	5.9	27.5	8 - 10 - 12
TOL4019032/144A	Micro Cable 144f G652D STD-E	6x24 (144f)	STD-E	6.7	35	8 - 10 - 12
TOL4019028/192A	Micro Cable 192f G652D STD-E	8x24 (192f)	STD-E	7.9	47	10 - 12

Color Code Systems

	1	2	3	4	5	6	7	8	9	10	11	12
S12 Fibers and Tubes	Red	Blue	White	Green	Yellow	Slate	Brown	Black	Violet	Orange	Aqua	Rose
	13	14	15	16	17	18	19	20	21	22	23	24
	Red —	Blue —	White —	Green —	Yellow —	Slate —	Brown —	Clear —	Violet —	Orange —	Aqua —	Rose —

	1	2	3	4	5	6	7	8	9	10	11	12
TIA-598 Fibers and Tubes	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua
	13	14	15	16	17	18	19	20	21	22	23	24
	Blue —	Orange —	Green —	Brown —	Slate —	White —	Red —	Clear —	Yellow —	Violet —	Rose —	Aqua —

	1	2	3	4	5	6	7	8	9	10	11	12
STD-E Fibers	Red	Blue	White	Green	Yellow	Slate	Brown	Black	Orange	Violet	Rose	Aqua
	13	14	15	16	17	18	19	20	21	22	23	24
	Red —	Blue —	White —	Green —	Yellow —	Slate —	Brown —	Clear —	Orange —	Violet —	Rose —	Aqua —

	1	2	3-6	7	8-16
STD-E Tubes	Red	Blue	White	Blue	White

The above chart is a quick reference guide for indentification of fibers and tubes in the most common cable designs.
For detailed information about the color code systems, please contact Hexatronic.

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